merchant translated this weight into carats, not as from the old ratis of Babar's or even of Akbar's day, but from the pearl ratis, of one or other value, with which he had become acquainted in the bazaars of India. Tavernier's rati, as calculated from the Paris carat on the ratio of ⅞, should have a value of 2·77088 troy grains, and as drawn from his various statements of equivalent weights it varies from 2·4066, in one case 2·750, to 2·797 troy grains. His mishkal also he puts at ⅙ the French ounce, *i.e.* 78·7 troy grains; which should, however, probably have been 6½ ounces to the mishkal, and the rati of Tavernier is entirely dissimilar to any known rati of ancient or modern India.

The 319½ ratis is readily explained on this hypothesis; and it is really too large a demand on our credulity to believe that two of the largest diamonds in the world should be severally of 319½ ratis and 320 ratis, though of different units of value, when a simpler explanation is able to dispose of the anomaly.

I have said that the marvellous coincidences of weight imported into the Koh-i-Nur history do not come to an end with Babar's 8 mishkals, with Anselm de Boot's 187½ carats, with Tavernier's 319½ ratis, nor even with Dr. Ball's miraculous chipping process, resulting in a reduction of the Great Mogul diamond to the identical weight of the Koh-i-Nur in 1850. The original diamond of Babar had to be accounted for, and its ghost had to be laid. So another coincidence had to be imported into the narrative, or rather into the romance. Another diamond had to be found, also with the precise weight of the Koh-i-Nur, and this Dr. Ball has ready to hand. The Darya-i-Nur, or "Sea of Light," reposes in the treasury of the Shah. Sir J. Malcolm saw it, and casually stated its weight as given to him at 186 carats. Now Sir J. Malcolm, during his residence at the Court of the Shah, not only was acquainted with the marvellous treasures in jewels brought by Nadir from the palace of Delhi, but he was enabled to have *facsimile* drawings of them made.

By the kindness of his son, General Malcolm, I possess the tracings of this dazzling wealth of jewellery. The Darya-i-Nur is a large flat diamond with bevelled edges, and in the form of a long rectangle. When Malcolm knew it, it was set in a glorious galaxy of mighty rubies. He could therefore have only known its weight from hearsay evidence, and the recorded carats were most likely the echo of those associated with the fame of the Koh-i-Nur. Now, I have no hesitation in asserting this Darya-i-Nur to be an old acquaintance of those familiar with Tavernier's pages. Unless two diamonds, flat, bevelled, and of identical dimensions, can be shown to co-exist, of above 200 carats weight, the stone known as the Golconda diamond or the Table diamond is no other than the Darya-i-Nur.

It happens fortunately to be one of the few stones described by Tavernier to the form and weight of which, as given by him, we can attach complete confidence. He had a lead model made from it in order to negotiate its sale: and he gives its weight as 176⅛ mangelins, or $242\frac{5}{16}$ "de nos carats." This gives its weight at 767·42 troy grains, or 240 English carats, this particular mangelin being, on Tavernier's estimate of 1⅜ of a carat, about 4·357 troy grains. Tavernier having had a lead model made of this remarkable flat diamond, he figures it no doubt with much exactitude. A copy of his figure and of the tracing of the Darya-i-Nur is subjoined, in which it will be seen that if the unsymmetrical end be cut off and the sides more accurately squared, so as to make the diamond a symmetrical rectangle, the figures of the two stones become identical in form and dimension. A card cut to represent the "Golconda" diamond, and the parts of it as described, gave the ratio of

the Golconda: the Darya-i-Nur = 10 : 8·5,

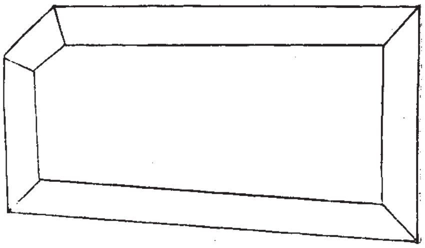
that is to say, the portion trimmed away was about 15 per cent.

The remaining stone would thus have a weight of about 214 English carats, and if 4 carats be allowed for the bevelling and squaring of the stone, the present weight of the Darya-i-Nur should be about 210 English carats.

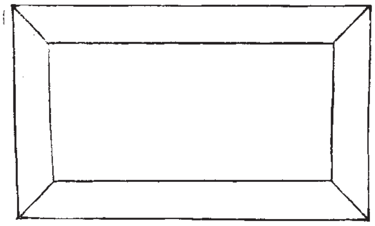
I trust I have thus laid this last phantom raised by the author of the "true history." But the final problem as to the Great Mogul diamond still remains.

If the Queen's proud trophy of the final conquest of India is indeed the great Koh-i-Nur, the old Malwa diamond descending to Her Majesty from the possession of Patan and Mogul dynasties of Delhi; carried off to Persia and named by Nadir; seized as the potent talisman of empire by Ahmed Shah, and held by his Durani descendants till it came back to India, the companion of the exile of Shah Sujah, and then torn from him by the grim Lion of Lahore—true to its destiny as "the possession, ever, of him that was the strongest,"—if this be indeed the stone that, from early times to 1850, preserved its form and weight of 8 mishkals, where was, and where is now, the Great Mogul diamond that Bernier told of? The answer is, I believe, the simplest and the most natural: It is, where the historian would look for it, in the treasury of Teheran. One large diamond, standing high upon an elliptic base, is there, or was there, in Sir John Malcolm's day. Its long diameter is much larger, and its shorter diameter smaller, than that of the diamond figured by Tavernier.

I do not assert it to be the Great Mogul. I assert merely that it probably is that great diamond; and I hope that in what has been said in the criticisms I have here offered upon the writers on the Koh-i-Nur I have averred nothing that does not rest on proof; that I have offered no conjecture that is not supported by reasonable probability; and that I have made no assault on any theory or fact asserted to be such by others, without at least offering some justification for my criticism in the reasons and facts I have been able to adduce.



Golconda Table Diamond.



Darya i-Nur.

A true history of the Koh-i-Nur has still to be written. I hope I have, in these criticisms, done something to clear the way for the writer of it. Other avocations and duties may prevent my undertaking the interesting task. At any rate, if it should ever be mine to perform it, I trust the result will at least bear some verisimilitude to a true history.

N. Story-Maskelyne.

SCIENTIFIC SERIALS.

A large portion of the number of the *Botanical Gazette* for July is occupied by an instalment of Mr. John Donnell Smith's "Undescribed Plants from Guatemala"; several of the new species are figured. New parasitic or saprophytic Fungi—Hyphomycetes and Uredineæ—are described in this number by Mr. R. Thaxter, and in that for August by Mr. J. C. Arthur. In the latter, Mr. T. Holm continues his study of some anatomical characters of North American Gramineæ, and Mr. F. Lamson Scribner contributes a sketch of the flora of Orono, Maine.

The numbers of the *Journal of Botany* for August and September contain the conclusion of Mr. G. Murray's important paper on the Algæ of the Clyde sea-area, accompanied by a map showing the various depths. This paper has now been issued separately. In his notes on Mycetozoa, Mr. A. Lister describes species found in various herbaria not included in Dr. Cooke's "Myxomycetes of Great Britain"—three of them new

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The paper is illustrated by five plates. Three new British species of *Hieracium* are described by Mr. E. F. Linton and Mr. W. H. Beeby.

SOCIETIES AND ACADEMIES.

Sydney.

Royal Society of New South Wales, August 5.—H. C. Russell, F.R.S., President, in the chair.—On the microscopic structure of Australian rocks, by Rev. J. Milne Curran.—The Chairman presented the Society's bronze medal and a money prize of £25, which had been awarded to Father Curran for this paper.—Prof. Anderson Stuart exhibited his new instrument for demonstrating the nature of such waves as those of light.

August 10.—H. O. Walker, in the chair.—Notes on slicing rocks for microscopic study, by Rev. J. Milne Curran, illustrated by rock sections in various stages of preparation for mounting.

August 12.—C. W. Darley, in the chair.—Methods of determining the stresses in braced structures, by J. I. Haycroft.

Paris.

Academy of Sciences, September 28.—M. Duchartre in the chair.—Notice of the works of M. P. P. Boileau, by M. Maurice Lévy.—Remarks on the international prototype of the metre, by M. Foerster.—Observations of four asteroids, discovered at Nice Observatory on August 28 and September 1, 8, and 11, by M. Charlois. The positions on the dates of discovery are given.—Verification of the law of refraction of equipotential surfaces, and measurement of the dielectric constant, by M. A. Perot.—Relation between the index of refraction of a body, its density, molecular weight, and diathermancy, by M. Aymonnet.—On the cyclone of August 18, at Martinique, by M. G. Tissandier.

Brussels.

Academy of Sciences, August 1.—M. Plateau in the chair.—On the predominance and extension of Upper Eocene deposits in the region between the Senne and the Dyle, by M. Michel Mourlon.—Direct synthesis of primary alcohols, by Dr. P. Henry.—On circular sections in surfaces of the second degree, by Prof. Cl. Servais.—On the curvature of lines of the order p possessing a multiple point of the order $p - 1$, by M. A. Demoulin.—Preliminary notes on the organization and development of different forms of Anthrozoaires, by M. Paul Cerfontaine. The author describes a new Cerianthus from the Red Sea, and names it *Cerianthus brachysoma.* He has also studied in detail the tentacles of *Cerianthus membranaceus*, and the variations of these organs during successive stages of individual evolution, and relates an interesting case of regeneration observed in *Astrodes calycularis.*—Researches on the lower organisms, by M. Jean Massart.

Göttingen.

Royal Scientific Society.—The *Nachrichten* from June to August 1891 contain the following papers of scientific interest:—

June.—Karl Heun, Berlin, mathematical note on the integration of the equation for the motion of Gauss's bifilar pendulum.

July.—Fr. Schilling, note on an interpretation of the formulæ of spherical trigonometry when complex values are assigned to the sides and angles of a spherical triangle.

August.—Eduard Riecke, on the molecular theory of piezo-electricity and pyroelectricity.—Tammann and W. Nernst, on the maximum vapour tension of hydrogen liberated from solutions by metals.—Tammann, the permeability of precipitate-films.—Eduard Riecke, on a surface connected with the electrical peculiarities of tourmaline.—David Hilbert, the theory of algebraic invariants of forms with any number of variables.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

The Universal Atlas, Part 7 (Cassell).—Food, Physiology, &c.: W. Durham (Black).—British Edible Fungi: Dr. M. C. Cooke (Paul).—South Africa, from Arab Domination to British Rule: edited by R. W. Murray (Stanford).—An Elementary Hand-book on Potable Water: F. Davis (Gay and Bird).—The Birds of the Sandwich Islands, Part 2: Wilson and Evans (Porter).—Differential and Integral Calculus: T. H. Miller (Percival).—Physiography: J. Spencer (Percival).—Geodesy: J. H. Gore (Heinemann).—Electricity and Magnetism: A. Guillemin; translated by Prof. S. P. Thompson (Macmillan).—Annuaire de l'Observatoire Municipal de Montsouris, 1891 (Paris, Gauthier-Villars).—Stones for Building and Decoration: G. P. Merrill (New York, Wiley).—Taxidermy and Zoological Collecting: W. T. Hornaday (Paul).—Dynamics of the Sun: J. W. Davis (New York).—The Man of Genius: Prof. C. Lombroso (Scott)—Ninth Annual Report of the Fishery Board for Scotland, Three Parts (Edinburgh).—Richerche Sperimentali Intorno a Certe Scintille Elettriche constituite da Masse Luminose im Moto: Prof. A. Righi (Bologna).—Proceedings of the Liverpool Geological Society, Part 3, vol. vi. (Liverpool).—Mind, No. 64 (Williams and Norgate).—Journal of the Royal Statistical Society, September (Stanford).—Journal of the Royal Agricultural Society, 3rd series, vol. ii., Part 3 (Murray).

DIARY OF SOCIETIES.

London.

THURSDAY, October 8.

Camera Club, at 8.30.—Paper by Captain Abney.

MONDAY, October 12.

Camera Club, at 8.30.—Lantern Evening.

THURSDAY, October 15.

Camera Club, at 8.30.—Bacteria Photographed: Andrew Pringle.

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